

# DIACETONE ALCOHOL

DAA

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Diacetone 4-Hydroxy-4-methyl-2-pentanone Tyranon	Watery liquid  Colorless to light yellow  Mild, pleasant odor  Floats and mixes with water.
Avoid contact with liquid. Avoid inhalation. Wear goggles and self-contained breathing apparatus. Call fire department. Notify local health and pollution control agencies. Protect water intakes.	
<b>Fire</b>	FLAMMABLE Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemical, alcohol foam or carbon dioxide. Water may be ineffective on fire.
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
<b>Water Pollution</b>	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and pollution control officials. Notify operators of nearby water intakes.

### 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
Stop discharge

### 2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 20; Alcohols, glycols  
2.2 Formula:  $\text{CH}_3\text{C}(\text{OH})(\text{CH}_3)\text{CH}_2\text{COCH}_3$   
2.3 IMO/UN Designation: 3.3/1148  
2.4 DOT ID No.: 1148  
2.5 CAS Registry No.: 123-42-2  
2.6 NAERG Guide No.: 129  
2.7 Standard Industrial Trade Classification: 51229

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Air pack or organic canister, rubber gloves, goggles.  
3.2 **Symptoms Following Exposure:** Vapor is irritating to the mucous membrane of the eye and respiratory tract. Inhalation can cause dizziness, nausea, some anesthesia. Very high concentrations have a narcotic effect. The liquid is not highly irritating to the skin but can cause dermatitis.  
3.3 **Treatment of Exposure:** INHALATION: remove victim to fresh air. Give artificial respiration if breathing has stopped. CONTACT WITH EYES OR SKIN: wash affected skin areas with water; flush eyes with water and get medical care if discomfort persists.  
3.4 **TLV-TWA:** 50 ppm  
3.5 **TLV-STEL:** Not listed.  
3.6 **TLV-Ceiling:** Not listed.  
3.7 **Toxicity by Ingestion:** Grade 2;  $\text{LD}_{50} = 0.5$  to 5 g/kg (rat)  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Currently not available  
3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. The effect is temporary.  
3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.  
3.12 **Odor Threshold:** Currently not available  
3.13 **IDLH Value:** 1,800 ppm  
3.14 **OSHA PEL-TWA:** 50 ppm  
3.15 **OSHA PEL-STEL:** Not listed.  
3.16 **OSHA PEL-Ceiling:** Not listed.  
3.17 **EPA AEGL:** Not listed

### 4. FIRE HAZARDS

- 4.1 **Flash Point:** 142°F O.C. 125°F C.C.  
4.2 **Flammable Limits in Air:** 1.8%-6.9%  
4.3 **Fire Extinguishing Agents:** Dry chemical, alcohol foam, carbon dioxide  
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent  
4.5 **Special Hazards of Combustion Products:** Not pertinent  
4.6 **Behavior in Fire:** Not pertinent  
4.7 **Auto Ignition Temperature:** 1118°F  
4.8 **Electrical Hazards:** Not pertinent  
4.9 **Burning Rate:** Currently not available  
4.10 **Adiabatic Flame Temperature:** Currently not available  
4.11 **Stoichiometric Air to Fuel Ratio:** 38.1 (calc.)  
4.12 **Flame Temperature:** Currently not available  
4.13 **Combustion Molar Ratio (Reactant to Product):** 12.0 (calc.)  
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction  
5.2 **Reactivity with Common Materials:** No reaction  
5.3 **Stability During Transport:** Stable  
5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent  
5.5 **Polymerization:** Not pertinent  
5.6 **Inhibitor of Polymerization:** Not pertinent

### 6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Currently not available  
6.2 **Waterfowl Toxicity:** Currently not available  
6.3 **Biological Oxygen Demand (BOD):** Currently not available  
6.4 **Food Chain Concentration Potential:** None  
6.5 **GESAMP Hazard Profile:**  
Bioaccumulation: 0  
Damage to living resources: 1  
Human Oral hazard: 1  
Human Contact hazard: I  
Reduction of amenities: X

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99.0%  
7.2 **Storage Temperature:** Ambient  
7.3 **Inert Atmosphere:** No requirement  
7.4 **Venting:** Open (flame arrester)  
7.5 **IMO Pollution Category:** D  
7.6 **Ship Type:** Data not available  
7.7 **Barge Hull Type:** Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Flammable liquid  
8.2 49 CFR Class: 3  
8.3 49 CFR Package Group: II  
8.4 Marine Pollutant: No  
8.5 NFPA Hazard Classification:  

Category	Classification
Health Hazard (Blue).....	1
Flammability (Red).....	2
Instability (Yellow).....	0

  
8.6 EPA Reportable Quantity: Not listed.  
8.7 EPA Pollution Category: Not listed.  
8.8 RCRA Waste Number: Not listed  
8.9 EPA FWPCA List: Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid  
9.2 **Molecular Weight:** 116.16  
9.3 **Boiling Point at 1 atm:** 328°F = 164.4°C = 437.4°K  
9.4 **Freezing Point:** -45.0°F = -42.8°C = 230.4°K  
9.5 **Critical Temperature:** 633.2°F = 334°C = 607.2°K  
9.6 **Critical Pressure:** 380 psia = 36 atm = 3.6 MN/m<sup>2</sup>  
9.7 **Specific Gravity:** 0.938 at 20°C (liquid)  
9.8 **Liquid Surface Tension:** Not pertinent  
9.9 **Liquid Water Interfacial Tension:** Not pertinent  
9.10 **Vapor (Gas) Specific Gravity:** 4.0  
9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.052  
9.12 **Latent Heat of Vaporization:** 150 Btu/lb = 85 cal/g = 3.6 X 10<sup>5</sup> J/kg  
9.13 **Heat of Combustion:** (est.) -13,000 Btu/lb = -7,250 cal/g = -303 X 10<sup>5</sup> J/kg  
9.14 **Heat of Decomposition:** Not pertinent  
9.15 **Heat of Solution:** Not pertinent  
9.16 **Heat of Polymerization:** Not pertinent  
9.17 **Heat of Fusion:** Currently not available  
9.18 **Limiting Value:** Currently not available  
9.19 **Reid Vapor Pressure:** 0.07 psia

### NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
40	59.520	85	0.490		N	52	3.836
50	59.180	90	0.498		O	54	3.747
60	58.830	95	0.506		T	56	3.660
70	58.480	100	0.514			58	3.576
80	58.140	105	0.522		P	60	3.495
90	57.790	110	0.530		E	62	3.416
100	57.440	115	0.538		R	64	3.339
110	57.100	120	0.545		T	66	3.265
120	56.750	125	0.553		I	68	3.193
130	56.400	130	0.561		N	70	3.123
140	56.060	135	0.569		E	72	3.055
150	55.710	140	0.577		N	74	2.989
160	55.360	145	0.585		T	76	2.925
170	55.020	150	0.593			78	2.862
180	54.670					80	2.802
190	54.320					82	2.743
200	53.970					84	2.686
210	53.630					86	2.630

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	M	60	0.013	60	0.00028	0	0.315
	I	80	0.030	80	0.00061	20	0.325
	S	100	0.065	100	0.00125	40	0.335
	C	120	0.128	120	0.00239	60	0.345
	I	140	0.239	140	0.00431	80	0.355
	B	160	0.424	160	0.00740	100	0.364
	L	180	0.718	180	0.01215	120	0.374
	E	200	1.169	200	0.01917	140	0.383
		220	1.834	220	0.02920	160	0.392
		240	2.787	240	0.04310	180	0.401
		260	4.115	260	0.06187	200	0.410
		280	5.920	280	0.08661	220	0.418
		300	8.320	300	0.11850	240	0.427
		320	11.450	320	0.15890	260	0.435
		340	15.450	340	0.20900	280	0.444
		360	20.480	360	0.27040	300	0.452
		380	26.720	380	0.34440	320	0.460
						340	0.467
						360	0.475
						380	0.483
						400	0.490
						420	0.498
						440	0.505